

STEP 1 - CHARACTERIZATION

The Callahan watershed is the portion of the Scott River subbasin between the Scott Valley towns of Etna and Callahan. It includes the South Fork Scott River and all tributaries to the Scott River between the South Fork Scott and Etna Creek, including Etna Creek. From the northern landscape boundary, the Scott River flows approximately 45 miles to the north and west to its confluence with the Klamath River. The watershed encompasses about 115,000 acres, all within Siskiyou County, California, the Klamath Mountains Physiographic Province, and partially within the boundaries of the Scott River Ranger District, Klamath National Forest.

The watershed is bounded by the divide between the Scott and Trinity Rivers to the south, the divide between Scott and Salmon River to the west, the drainages of Kidder Creek and other middle Scott River tributaries to the north, and the East Fork Scott River watershed to the east, see Figure 0-1 Klamath Basin Vicinity, contained in the introduction. Drainages on the western side of the Scott River from north to south include Etna Creek, Clark Creek, French Creek, Miner's Creek, Sugar Creek, Wildcat Creek, and the South Fork of the Scott River. Jackson, Slide, Fox, and Boulder Creeks are tributaries to the South Fork of the Scott River and are included in the landscape. Drainages on the east side of the Scott River include McConaughy, Facey, Messner, and Limekiln Gulches.

The watershed contains jagged peaks and steep, forested slopes below the major divides; gently rolling open woodlands, chaparral, and pasture in the lower slopes; and a wide, low gradient floodplain with extensive dredger tailings along the main stem of the Scott River. Elevations in the landscape range from about 2,800 feet at the Scott River just east of Etna to 8,200 feet at Russian Peak on the landscape's west boundary. Craggy Peak on the southeast boundary is also very high at 8,100 feet.

California State Highway 3 crosses the watershed from north to south, connecting the towns of Etna and Callahan and providing paved access to areas north, south, and east of the watershed. The Callahan-Cecilville Road (1C02) provides access from Callahan to the southwest across Carter Meadows Summit to the South Fork Salmon River. The Sawyers Bar Road (1C01) provides access from Etna to the southwest over Etna Summit to the North Fork Salmon River. Both of these County roads are paved and maintained throughout the winter. Access to other parts of the

watershed is provided by local County, National Forest, or private roads.

Land ownership is 44% Federal lands (40% NF and 4% BLM), 20% industrial timber, and 36% other private lands. National Forest land can be found as low as 3,200 feet in elevation, but is generally above 4,000 feet, and almost entirely on the west side of the Scott River. Only a portion of an isolated Forest Service section is located on the east side (about 500 acres) in the Messner/Limekiln Gulch area. Inter-mingled ownerships, notably with Fruit Growers Supply Company, are concentrated between 3,600 and 5,000 feet at the southern end of the watershed, see Figure 1-1 Callahan Base Map, contained in the Map Packet located at the end of this document.

The National Forest lands in the watershed contain parts of three wilderness areas. The Marble Mountain Wilderness is found mostly to the north and west of the watershed with a small portion in the upper Etna-Mill Creek area. The Russian Wilderness occupies the high mountains between Etna Summit and Carter Meadows Summit on both sides of the Salmon/Scott divide. The Trinity Alps Wilderness lies mostly south of the watershed with a portion in the South Fork Scott River drainage.

The Sugar Creek Research Natural Area (RNA) and the Duck Lake Botanical Special Interest Area (SIA) are almost entirely in the Russian Wilderness. These areas are both designated due to the occurrence of a unique and rich diversity of conifer species. The SIA designation is meant to promote education and use by people. The RNA is for research concerning the conifer species mix; heavy recreational use is discouraged. Another SIA, the Cement Banks Geologic Area, is located in the Trinity Alps Wilderness near Craggy Peak. This area is a unique barren ridge of cemented gravels.

Landforms in the high country have been shaped by glaciers in the last ice age. Glacial scoured bowls of exposed bedrock, lush valleys, and high mountain lakes are common. Midslope areas are composed of mountain sideslopes, dormant earthflows, and inner gorges. The large, nearly level Scott Valley consists of mixed alluvium washed down from slopes above.

The geology of the watershed is a complex of several geologic terranes and many identified formations and rock types. This complex geology can be simplified into three basic rock types; granitic, ultramafic, and metamorphic rocks. Granitic rocks are found in two areas; the first a band from the Russian Wilderness

through the middle of the Etna Creek drainage, the second in the Boulder Creek area in the southeast corner of the watershed. The ultramafic rocks occupy parts of the South Fork Scott drainage, generally separating the two locations of granitic rock, and extending into the Scott Valley. Metamorphic rocks make up the remainder of bedrock types.

The climate can be characterized as montane mediterranean, with cold wet winters and hot dry summers. Average annual precipitation totals range from below 20" at the lowest elevations along the Scott River to greater than 60" at the highest elevations at the western and southern extents of the watershed. Average precipitation generally increases with elevation and decreases from southwest to northeast across the watershed. Winter precipitation is mostly rain at the lower elevations, below about 4,000' with a rain/snow transition zone between about 4,000' and 5,000'. Snow typically accumulates in the rain/snow transition zone but is frequently melted by mid-winter rains. The higher elevations, especially above 6,000', have short summers and relatively long winters with deep snowpacks. Although most precipitation falls winter through spring, there may be short periods of locally intense rainfall from summer thunderstorms.

Stream flows are highest during warm winter rains and rain-on-snow events, generally between November and March. Flooding is often associated with these events. The largest flood in recent history occurred in 1964 as a result of a very warm rain, snow level 7,000' or higher, melting snow that extended as low as the valley floor. A similar storm event (rain-on-snow) occurred in January of 1997, a preliminary assessment of the effects from this storm can be found in Appendix B - Flood Assessment. Spring stream flows are typically not as large as mid-winter floods, but high flows are sustained over several weeks in those tributaries with headwaters within the snowpack zone. Many streams are completely dry by late summer or early fall, especially those on the east side of the river and near the valley bottom.

The Scott River and tributaries in the watershed provide habitat for chinook and coho salmon, and steelhead; three anadromous fish species petitioned or proposed for listing under the Endangered Species Act. Habitat is also provided for several resident fish species, amphibians, and aquatic dependent terrestrial wildlife. Etna Creek provides the municipal water supply for the town of Etna and Boulder Creek provides water to the town of Callahan. Many streams are also diverted to a vast network of irrigation ditches that supply water for agriculture in the Scott Valley.

Vegetation varies with elevation, rainfall, exposure, and soils. The highest elevation sites, above 6,000

feet, are dominated by red and white fir with a rich diversity of associated tree species including Engelmann spruce, brewer spruce, fox tail pine, subalpine fir, western white pine, and mountain hemlock. Alpine meadows and sparsely vegetated rocky areas are also found at the higher elevations. Mid elevations contain mixed conifer stands dominated by white fir and Douglas-fir above 4,000' and Douglas-fir/ponderosa pine down to about 3,000'. Jeffery pine and incense-cedar are the primary species on the ultramafic soils. White oak, grasslands, and chaparral dominate the valley floor and slopes east of the Scott River in areas without irrigated agriculture.

The watershed provides habitat for a wide variety of wildlife species including habitat critical to species that are listed or petitioned for listing through the *Endangered Species Act*. Some of these habitats may be at-risk and need protection or enhancement. Late-successional forest stands and big game summer and winter range are considered some of the more important wildlife features within the watershed.

There are approximately 11,000 acres of Late-Successional Reserves (LSRs) in this watershed. These management areas have been established for the protection and enhancement of late-successional and old-growth ecosystems. Habitat for wildlife species including the northern spotted owl which depend on late-successional forests is provided by the LSRs.

Previous to 1850, the Scott Valley was occupied by members of the Shasta Tribe. Settlement by Euro-Americans began in the 1850s with the discovery of gold in the area. Gold was mined from hard rock mines and placer deposits in the South Fork Scott and along the main channel of the Scott River, leaving behind large areas of dredger tailings. Currently some mining occurs in the watershed. Agriculture is the primary industry in the Scott Valley, mostly cattle ranching, alfalfa grazing, and timber harvest. Cattle ranching primarily depends on valley floor pastures and irrigated feed crops but relies some on higher elevation range allotments for summer forage. Timber harvest is primarily on the industrial forest lands but supplemented by National Forest and small private landownerships.

Fire suppression/prevention activities became effective in the 1920s. Before this, American Indians and early settlers regularly set fires and let natural wildfires burn. The last large fire (>100 acres) occurred in 1957. Fire suppression altered vegetative succession and spatial arrangement of vegetative types throughout the watershed. Natural fuels buildup, increased densities of forested stands, activity fuels from timber harvest, and increased urban

interface has increased the likelihood of catastrophic fire occurring in the watershed in the near future.

The Etna area at the northern boundary of the watershed has a population of about 850 residents. Callahan at the southeast boundary has a population of about 70. The overall population is approximately 1,300. Etna Creek provides domestic water for the

town of Etna and Boulder Creek is the domestic water source for Callahan. Employment for residents include ranching and timber industry jobs within the watershed, but many have outside employment. Local residents and visitors from outside the area rely on the watershed for recreational activities (fishing, hunting, , wilderness access, etc.) and obtaining forest products such as firewood and mushrooms.